



DEFENSE HEALTH BOARD
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DEC 11 2010

MEMORANDUM FOR: GEORGE PEACH TAYLOR, JR., M.D., DEPUTY ASSISTANT SECRETARY OF DEFENSE (FORCE HEALTH PROTECTION AND READINESS), PERFORMING THE DUTIES OF THE ASSISTANT SECRETARY OF DEFENSE FOR HEALTH AFFAIRS

SUBJECT: Recommendations Pertaining to the Inclusion of the Measles, Mumps, and Rubella Vaccine within the Navy Accessions Screening and Immunization Program 2010-04

INTRODUCTION

1. In a memorandum dated June 9, 2010, the Acting Chief of the Bureau of Medicine and Surgery, Department of the Navy, requested that the Defense Health Board (DHB) review the scientific evidence concerning the effectiveness of the Measles, Mumps, and Rubella (MMR) vaccine in preventing mumps disease.
 - a. In light of recent mumps outbreaks in the United States, the Board was requested to advise Navy Medicine if they should mandate MMR vaccination in recruit training centers or continue the current protocol under the Accessions Screening and Immunization Program (ASIP).
 - b. At present, recruits are screened for immunity to MMR, and only those indirectly demonstrating a lack of immunity to mumps are vaccinated. Mandatory MMR vaccination would be reinstated if an outbreak were to occur.
2. The Board accepted the request to examine the Navy ASIP regarding mumps on June 9, 2010.
3. The Navy proposed three potential courses of action for the Board's consideration;
 - a. Continue the current ASIP and monitor mumps case incidence within the Services and broader community. Reinstitute mandatory MMR vaccinations for all recruits if mumps outbreaks occur at recruit training sites or if the number of cases increases.
 - b. Continue the current ASIP with no monitoring of mumps case incidence and assume the current MMR recruit immunization rate of 10 to 15 percent is sufficient to prevent mumps outbreaks and increased case incidence.
 - c. Exclude MMR vaccine from the ASIP and resume mandatory universal MMR vaccination upon accession.
4. The DHB Infectious Disease Control Subcommittee was assigned to address this question. The Subcommittee met on June 9, 2010 and July 14, 2010. Among the issues examined

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were: mumps case incidence among Department of Defense (DoD) Active Duty Service members between 2000 and 2009; serological data indicating the degree of immunity to measles and rubella among Armed Forces recruits; percent of Navy accessions who receive the MMR vaccine; cost estimates for the MMR screening and vaccination programs; projected cost-savings associated with conducting MMR screening without universal vaccination; and, MMR vaccine side-effects and associated adverse events.

BACKGROUND

5. The Centers for Disease Control and Prevention (CDC) recommends universal immunization against MMR in order to reduce mumps disease severity and outbreaks. However, for reasons that remain unclear, despite relatively high mumps vaccination rates, large-scale outbreaks have occurred in 2006 and 2009.
6. The Department of Navy Bureau of Medicine and Surgery instituted the ASIP in 2009 to decrease unnecessary vaccinations and reduce costs. Navy and Marine Corps recruit training sites have been following the ASIP since its implementation.
7. The ASIP assesses the presence of protective immunity for several infectious diseases through serological testing. Only vaccines that are then clinically indicated are administered to recruits. Mumps screening is conducted by assessing measles and rubella virus-neutralizing antibody titer levels, which indirectly indicate the degree of protective immunity against mumps virus infection.
 - a. Mumps titers are not used due to their poor ability to predict both those at risk for disease and those who are protected. Therefore, measles and rubella titers are currently used as surrogate measures for the assessment of immunity against mumps, with a positive predictive value exceeding 95 percent.
 - c. The mumps component of the MMR vaccine is less effectiveness than either the measles or rubella vaccine components. This brings into question the continued inclusion of MMR vaccination under the ASIP and the potential risk of insufficiently protecting Service members from acquiring mumps disease.
8. On April 16, 2004 the Armed Forces Epidemiological Board (AFEB) advised the Department that concurrently-administered vaccines in the recruit setting should be reduced where possible, and provided only to susceptible individuals following serological screening tests.

FINDINGS

9. Between 2004 and 2008, military medical treatment facilities (MTFs) reported 12 mumps cases among Active Duty and Reserve component members of the Armed Forces.

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10. Since the implementation of the Navy ASIP in 2009, no mumps cases have been reported within the Navy as well as Marines.
11. Armed Forces Health Surveillance Center (AFHSC) serological data indicate that in 2007, between 80 and 85 percent of recruits demonstrated immunity to measles and rubella while 74-80 percent of recruits had immunity against mumps.
 - a. This would suggest that the immune response following MMR vaccination wanes at a faster rate for mumps than for either measles or rubella.
 - b. Approximately 15 to 20 percent of accessions received the MMR vaccine that year.
12. Significant cost-savings associated with unnecessary vaccinations have resulted since the implementation of the ASIP.

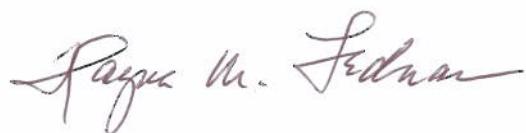
RECOMMENDATIONS

13. Based on the findings, the Board provides the following recommendations for the Department:

- a. The current practice followed under the Navy ASIP should be continued. The MMR vaccine should be administered solely to eligible recruits who demonstrate a lack of adequate immunity to mumps following the serological screening. Universal MMR vaccination would be re-instituted in the event of an increased risk of mumps outbreak.
- b. Close surveillance for incidence of mumps cases should be maintained.

14. The above recommendations were approved unanimously.

FOR THE DEFENSE HEALTH BOARD:



Wayne M. Lednar, MD, PhD
DHB Co-Vice President



Gregory A. Poland, MD
DHB Co-Vice President
Chair, Infectious Disease Control Subcommittee

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2. Presentation, Navy Accession Screening Immunization Program: Should Mumps Be Part of the Testing Regimen, Dr. Robert Morrow, Clinical Care and Public Health, Navy Bureau of Medicine and Surgery, to the DHB Infectious Disease Control Subcommittee, 9 June 2010.
3. Presentation, Navy Accession Screening Immunization Program: Should Mumps Be Part of the Testing Regimen, CAPT Neal Naito, Director, Clinical Care and Public Health, Navy Bureau of Medicine and Surgery, to the DHB, 8 June 2010.
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8. Eick AA, Zheng H, Wang Z et al (2008) Incidence of Mumps and Immunity to Measles, Mumps, and Rubella Among U.S. Military Recruits, 2000-2004 *Vaccine* 26:494-501.
9. Mauldin J, Carbone K, Hsu H et al (2005) *Journal of Clinical Microbiology* 43(9):4847-4851.
10. Armed Forces Epidemiological board, Recommendations Regarding Multiple Concurrent Immunizations and Safety Concerns, 16 April 2004.